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REMARKS

This amendment after final is responsive to the Final Office Action, dated November 20, 2003, and is submitted in accordance with Rule 116.

This is the first amendment submitted after the Final Office action. The amendment is believed to place claims 1-9 (and the application) in condition for allowance or in better form for appeal. The amendment responds to the new ground of rejection first presented in the Final Office Action, and which, therefore, could not have been presented earlier. No new issues are presented. Accordingly, applicant respectfully requests that the amendment be entered.

In order to secure the benefit of any advisory action as may be given that requires further response, this amendment is being filed within two months of the mailing date of the Final Office Action.

By this amendment claim 1 has been amended to define the method invention with greater particularity and more clearly distinguish the invention from any teachings of the prior art references. Dependent claims 2-9 have been amended to place the claims in better form and ensure the recitations contain proper antecedent basis in the parent claims. The remaining claims in the application stand withdrawn from consideration pursuant to the prior restriction requirement.

Claims 1-9 were rejected under 35 U.S.C. 103 (a) as unpatentable over Walker in view of WO 98/11582 and Curtis US 3,471,669, the latter being newly cited. This rejection is respectively traversed.

In formulating the rejection, Examiner asserted that Walker discloses the claimed invention (e.g. the claimed method invention) with but two exceptions, that *the sleeve being pre-applied to the circuit interrupter and the circuit interrupter with the pre-applied*

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sleeve being subsequently inserted into the housing" (sic the method used by Walker to fabricate an interrupter does not pre-apply a sleeve to the circuit interrupter and then insert the sleeved circuit interrupter into the housing). For those exceptions, Examiner resorts to Curtis and WO98/11582.

Examiner concludes that it would have been obvious to use the "mechanical insertion design" of Curtis for the circuit interrupter of Walker, "as modified," for the purpose of facilitating replacement. Examiner further concludes that it would have been obvious to use the method of WO98/11582 for the interrupter assembly of Walker "for the purpose of securing the circuit interrupter within the housing."

Applicant submits that Examiner's proposed reconstruction of the method (and structure) of Walker fails for a number of reasons. Neither the WO98/11582 publication or the Curtis patent show, teach or describe the structure or process Examiner asserts is contained in the respective publication or patent.

First, WO 98/11582 corresponds to PCT/US97/15936, referred to by applicant at page 3, line 7 of the preamble to the subject specification. The WIPO publication is concerned only with encapsulation of the vacuum interrupter/sleeve assembly in the process of forming the insulating housing, contrary to the Examiner's assertion that this reference "discloses a method of mounting a circuit interrupter into a housing including the steps of applying a polymeric sleeve to the exterior of a circuit interrupter and subsequently heating the sleeve to secure the sleeve and the interrupter into a housing." Examiner refers to claim 26 of the publication as support for Examiner's assertions. However, to the contrary, claim 26 of the WO publication does not support Examiner, but refers to "A method of encapsulating an interrupter comprising the steps of:

applying a layer of compliant material to the interrupter;
heating the interrupter and the layer of compliant material; and
(subsequently) encapsulating the interrupter and the layer of compliant material within a rigid material."

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There is absolutely no suggestion in the WIPO publication that the vacuum interrupter/sleeve assembly may be fitted into a pre-moulded insulating housing, as recited in claim 1. Nor is there any showing or suggestion in the publication that the interrupter sleeve assembly could be removed from the encapsulated assembly.

Next consider the newly cited Curtis patent, entitled, Encapsulated Switch Assembly for Underground Electric Distribution Service. The encapsulated assembly in Curtis is for underground residential distribution systems, which typically is a low voltage. That assembly is a unitary assembly containing a manually operated toggle switch mechanism 10, a circuit interrupter 14 and a pair of electrical connectors 66 and 68, which are female connectors. The entire assembly is encapsulated, leaving exposed only the metal ends of the two connectors. When installed in the electric system the assembly is connected in series in the electric circuit by plugging male connectors connected to the wiring of the electric distribution system, such as male connector 72, into the corresponding female connectors of the assembly.

The rejection states that "*Curtis teaches an electrical component/connector being encased within a sleeve and being subsequently mechanically inserted within a housing*" and later refers to that as a "mechanical insert design." Applicant disagrees with that assertion. Curtis DOES NOT teach one to subsequently mechanically insert a sleeve encased component/connector into a pre-formed housing.

Precisely what particular element or element Examiner is referring to as "component/connector" in the rejection is vague and non-specific, forcing applicant to consider every possibility. At column 2, lines 53 to 55, Curtis states "*A toggle mechanism 10 is mounted within a box-like metal housing 12 to which a vacuum interrupter unit 14 is affixed*". That is, the toggle mechanism 10, but not the circuit interrupter 14, is positioned inside metal housing 12. But the circuit interrupter 14 (ensleeved by a ceramic 50) is located outside that housing attached to a side wall of

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the housing 12 (see Fig. 3). At column 3, lines 54 to 65, Curtis further states "*The housing, 12 unit 14 and connectors 66 and 68 are encapsulated by a waterproof elastic jacket 76 of moulded plastic material (of high dielectric strength)*". Under no circumstances, could the metal housing 12 and/or vacuum interrupter 14 be removed from the assembly illustrated in FIGS. 3, 4 or 5 of Curtis since all the devices are entirely engulfed in or encapsulated by the elastic jacket 76 of moulded plastic material. There is no teaching in Curtis that one intends to perform or performs a removal. Further, there is no suggestion whatsoever in Curtis that the insulating housing 76 (as distinct from the metal housing 12) is pre-formed or that the circuit interrupter 14 could be removed therefrom.

If by a stretch of the imagination, the reference in Examiner's reasoning to "component/connector" was intended to refer to the toggle mechanism 10 in Curtis, and or to other paraphernalia located inside metal housing 12, applicant notes that those elements are not shown to be encased within a sleeve. Lastly, Curtis presents a pretty clear teaching that one should not place a circuit interrupter 14 inside a metal housing, such as housing 12, and that one should encapsulate the sleeved circuit interrupter 14 in an insulating material, not insert the circuit interrupter into a preformed insulating housing. To the contrary, by showing that one should encapsulate the circuit interrupter, Curtis teaches away from the claimed method.

By a further stretch of the imagination the reference in Examiner's reasoning to "component/connector" may have been intended to refer to the construction of the end electrical female connector 68 and the relationship thereto with the mating male connector 70. Those connectors are described at Col. 4, lines 27-45 of Curtis. Female connector 68 is surrounded by a frusto-conical sheath 90 formed by the encapsulating jacket 76 of the assembly. A male connector 70 plugs into female connector 68. That male connector contains an insulating sheath 88, which serves as the insulating support

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to the conductor 70 within the metal shell of the male connector. That sheath is shaped to complement or mate with the sheath 90 of the female connector on the assembly. Col. 5 lines 26-35 of Curtis describes coupling and uncoupling of the formed connectors.

The electrical connector 68 of Curtis is not a device referred to as an electrical circuit interrupter. It is a connector. Further electrical connector 68 of Curtis is not inserted into a "housing" for the female connector. Rather a male connector 70 is inserted into electrical connector 68, and the outer sheath 90 on the female connector 68 is covered over by the insulating sheath 88 of the male connector 70, which is a pre-formed component of a different electrical connector. That insulating sheath 88 resides in the metal shell of male connector 70. As known to those skilled in the connector art a primary function of that insulation is to support the cylindrical metal of connector 70 and maintain that metal in spaced non-contacting relationship to the metal side wall of the connector shell to avoid a short-circuit.

The selected elements of the female and male connectors illustrated in the distribution assembly of Curtis does not contain any suggestion or teaching that an electrical circuit interrupter should be fabricated in the manner that Curtis fabricates the electrical connector portion of that distribution assembly. To the contrary, by expressly teaching that the electrical circuit interrupter of his distribution assembly should be encapsulated, and not fabricated in the manner of his electrical male connector, Curtis effectively teaches away from the claimed method invention.

Applicant submits that the proposed reconstruction of the method of fabrication of the circuit interrupter presented in the Walker patent that Examiner hypothesized fails due to the foregoing deficiencies in the applied references, notwithstanding the lack of motive to make any such change, next considered.

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In making unreasonable factual representations concerning the prior art, it is evident that Examiner is attempting a reconstruction of Walker based entirely on hindsight gleaned from applicant's disclosure. A legion of precedent, some of which is hereafter cited, holds hindsight reconstruction impermissible.

The purported motive for attempting to reconstruct the fabrication process of Walker according to Examiner is "for the purpose of facilitating replacement," presumably of the circuit interrupter in the housing. But Examiner has not pointed out any prior art teaching in the circuit interrupter art to make a circuit interrupter that has been encapsulated to be replaceable separate from the encapsulation, and applicant finds no such teaching or suggestion. The oldest reference cited by Examiner dates from the year 1962. Where has such a suggestion or motivation been for at least the past 40 years? Nor is it evident to applicant how three different references, which all show the encapsulation of an electrical circuit interrupter, can be combined to produce a method for constructing an electrical circuit interrupter that is not encapsulated and may thereby be replaceable. Should Examiner persist in the rejection, applicant respectfully requests Examiner to specifically point out the teaching of such a motive.

Claim 1 of the present invention recites "A method for removably locating an electrical circuit interrupter into a pre-moulded polymeric insulating housing, said pre-moulded polymeric insulating housing including a locating cavity of pre-determined shape, wherein said electrical circuit interrupter may be replaced, if required, after insertion into said pre-moulded polymeric insulating housing."

None of the prior art applied references contemplates, shows or teaches the use of a pre-moulded insulating housing for an electrical circuit interrupter. A pre-moulded insulating housing can be tested to ensure electrical integrity before the assembly process is commenced, ensuring a greater yield of acceptable units than otherwise.

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Similarly, none of the prior art references contemplate, show or suggest that the circuit interrupter may be removable from the insulating housing, since in all of the structures disclosed in those references, the insulating housing is cast around the vacuum interrupter to encapsulate the circuit interrupter, thereby preventing the interrupter from being later removed. That produces a housing structure from which the interrupter cannot be removed undamaged. Theoretically, one might attempt to chip away at the encapsulation with a hammer and chisel or other, but the fact is that procedure would damage the encapsulated article or be so slow and tedious and in any event is impractical even to attempt,

Claim 1 also recites the step of "inserting said polymeric ensleeved electrical circuit interrupter into said locating cavity of pre-determined shape in said pre-moulded polymeric insulating housing for engagement with at least one wall of said locating cavity."

As previously discussed, the recited step of insertion is not found in Curtis or the WO 98/11532 references, and, as Examiner admits, is not found in Walker.

Claim 1 also recites: "mechanically releasably securing said polymeric ensleeved electrical circuit interrupter in said locating cavity in said pre-moulded polymeric insulating housing whereby said polymeric ensleeved electrical circuit interrupter is retained in said polymeric housing or, if desired thereafter, may be unsecured therefrom and replaced."

None of the references show or teach mechanically releasably securing a polymeric ensleeved circuit interrupter in a cavity in a premolded polymeric housing so that if desired the polymeric ensleeved circuit interrupter may be unsecured from that housing. Applicant doesn't find any such teaching. In the event that Examiner persists in the rejection of claim 1, applicant respectfully requests that the whereabouts of such a teaching be specifically pointed out.

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The foregoing method and steps recited in claim 1 are not shown or taught by any combination of Walker, Curtis and WO98/11582.

On page 2 of the Office Action, Examiner, in referring to the Walker reference, indicates that Walker discloses an electrical circuit interrupter mechanically secured within a housing mechanically connected to the housing having a sleeve of polymeric material formed about the circuit interrupter. The Examiner continues in the following paragraph, stating "*Walker discloses the instant claimed invention except for: the sleeve being pre-applied to the circuit interrupter and the circuit interrupter with the pre-applied sleeve being subsequently inserted into the housing,*" a negative pregnant implying that Walker contains a pre-formed insulating housing.

With all due respect, applicant submits that Examiner is incorrect in stating that the circuit interrupter with the pre-applied sleeve is "*subsequently inserted into the housing*" as in the Walker reference. It is clear that "the housing" in Walker is formed around the vacuum interrupter during the encapsulation process, a late step in the manufacturing process. In other words, in the Walker reference there is no pre-formed housing in existence before the final act of encapsulation and there can be no insertion of a polymeric ensleeved electrical circuit interrupter into a cavity in a pre-formed housing.

As stated in claim 1, the present invention is concerned with "A method for removably locating an electrical circuit interrupter into a pre-moulded polymeric insulating housing."

The Examiner's attention is drawn to column 2, lines 54 to 57 of Walker, wherein Walker states "*Further, the present invention provides a means of sealing the encapsulation die during production. The present invention overcomes the deficiencies*

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of the prior art". Further, at column 3 in Walker, reference is made to lines 62 to 63, wherein it is stated that "Enclosure 16 (shown in Figure 1) is moulded in an insulating material such as cycloaliphatic epoxy 54" and an inspection of FIG. 1 shows that both numerals 16 and 54 have lead lines connected to the insulating housing in which the vacuum interrupter is encapsulated. Indeed, the Examiner is invited to carefully inspect the illustration of enclosure 16 in FIG. 1 and in particular, the region of the inner bore of the housing near the lead line for reference numeral 41. The drawing in Walker shows clearly a stepped configuration. That stepped configuration would physically prevent the vacuum interrupter with the polyurethane sleeve disposed there around from being withdrawn from enclosure 16. The circuit interrupter in Walker, thus, cannot be removable.

The Examiner is again referred to the passage at column 7, line 60 to column 8, line 2 in Walker, which should be read in conjunction with the statement at column 2, lines 54 to 57 therein from which it is considered that to a person skilled in the art of injection moulding, the formation of enclosure (housing) 16 occurs in an encapsulation die with the polyurethane sleeved vacuum interrupter supported within the die cavity prior to injection of the cycloaliphatic epoxy resin to surround the sleeved vacuum interrupter to encapsulate the interrupter as shown in Figure 1.

At page 8, lines 1 and 2 of Walker it is stated "The current interchange 10 is assembled after the encapsulation die has been used", thereby clearly indicating to a person skilled in the art that the sleeved vacuum interrupter assembly is cast into or otherwise encapsulated by the insulating housing 16.

There is no suggestion whatsoever in the teachings of the Walker reference that either housing 16 may be pre-formed or, alternatively, that the vacuum interrupter may be removed from housing 16 at any stage after the formation of housing 16.

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The prior art uncovered by Examiner following Examiner's exhaustive prior art search show and teach that electrical circuit interrupters of the prior art in applicant's field of endeavor are encapsulated. That comes as no surprise. Applicant's knowledge of the prior art is the same as that uncovered by Examiner, and applicant has explored that subject and applicant's knowledge up front in the specification of the present application. Under the heading "Description of Related Art" at page 1 and extending to page 3, line 12, there is a discussion of prior art high voltage switch systems all of which embody a vacuum interrupter device encapsulated in a insulated housing wherein the vacuum interrupter is supported in a mould and a fluid polymeric compound is introduced into the mould to surround (encapsulate) the vacuum interrupter, the fluid polymeric compound, when cured, forming the external insulated housing around the circuit interrupter. The structure so obtained is in effect a unitary structure as the vacuum interrupter has been permanently cast within the insulating housing and thus is incapable of being removed and/or replaced. In all of the prior art references the purpose of the polymeric sleeve formed on the outer surface of the vacuum interrupter is to act as a "shock absorber" to avoid damage to the vacuum interrupter as the moulded insulating housing shrinks quite significantly when cooled after the exothermic polymerization reaction.

Examiner's attention is drawn particularly to the passages at page 3, line 31 through to page 4, line 7, wherein the disadvantages of "prior art epoxy encapsulated vacuum interrupters" is discussed. In particular, the point is made that with the prior art encapsulated devices, electrical integrity of the insulating housing cannot be tested until the entire assembly has been completed, "if the assembly is found to be deficient, due to air voids etc., the entire assembly, including an expensive but otherwise functional vacuum interrupter must be discarded". The passages go on to demonstrate also that in a prior art encapsulated high voltage switching system, it is not possible to remove and replace the interrupter due to a fault in the interrupter itself "and again the entire assembly must be discarded".

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If neither Examiner or applicant found nothing better as prior art, it would appear unlikely that anyone else will later find anything better. Applicant should be given credit for applicant's "flash of genius" so to speak.

Examiner bears the burden of establishing obviousness of a claimed invention under 35 U.S.C. 103, *In re Fritch*, 23 USPQ 2d 1780, 1783-84 (Fed. Cir. 1992). As stated in *In re Fritch* "The Examiner bears the burden of establishing a *prima facie* case of obviousness based on the prior art (citing *In re Piasecki* 223 USPQ 785, 787-88 (Fed. Cir. 1984). That burden can be satisfied only "...*by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art that would lead that individual to combine the relevant teachings of the references*" (*In re Fine*, 5 USPQ 2d, 1596, 1598 (Fed. Cir. 1988)). The patent applicant may then attack the Examiner's *prima facie* determination as improperly made out, or the applicant may present objective evidence tending to support a conclusion of nonobviousness (*In re Heldt* 167 USPQ 676, 678 (CCPA 1970).

Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so (citing *ACS Hosp. Systems, Inc. v. Montefiore Hosp.*, 221 USPQ 929, 933 (Fed. Cir. 1984). Although couched in terms of combining teachings found in the prior art, the same inquiry must be carried out in the context of a purported obvious "modification" of the prior art. The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification (*In re Gordon* 221 USPQ 1125, 1127 (Fed. Cir. 1984)).

*It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious (*In re Gorman*, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior*

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art to deprecate the claimed invention" (In re Fine, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988)).

For the foregoing reasons, applicant respectfully requests Examiner to reconsider and withdraw the rejection of claim 1 as being obvious.

Dependent claims 2 through 9 are directly or indirectly dependent upon claim 1 recite additional aspects of the method and include all of the limitations in claim 1. Applicant refers to the discussion of the rejection of claim 1, which is incorporated herewithin. For the foregoing reason application submits that claims 2-9 cannot be rendered obvious by any combination of Walker and the WIPO publication. Accordingly, applicant submits that claims 2 through 9 also recite patentable subject matter

It is believed that the foregoing amendment to the claims places the application in condition for allowance. Accordingly, an early notice of allowance is respectfully solicited.

Applicant has reviewed the additional patents to Luehring, U.S. 4,566,804, and Frank, U.S. 3,025,375 cited by Examiner as being of interest. Although seen as being of interest, applicant agrees with Examiner that those references do not merit further discussion.

SUMMARY OF CLAIMS

Claims 1-9 and 19-32 remain pending in the application. Claims 19-32 stand withdrawn from consideration as being directed to a non-elected invention (and are subject to cancellation by Examiner on allowance of the rejected claims) and Claims 1-9 stand rejected.

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CLAIM FEE

The total number of claims in the application and the number of claims in independent form remains unchanged. Accordingly, no additional claim fee is due.

If Examiner believes the foregoing amendments are insufficient but that some additional changes would place the application in condition for allowance that can be accomplished by an Examiner's amendment, Examiner is invited to telephone the undersigned.

Respectfully submitted,

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